REMARKS

Claims 9 and 16 have been amended. Claims 9-20 are currently pending in the present application. No new matter has been added. Reexamination and reconsideration of the application are respectfully requested.

RESTRICTION REQUIREMENT

Paragraph 1 of the Action sets forth a restriction requirement to one of the following inventions under 35 U.S.C. 121: Group I, claims 1-8 drawn to a cable, Group II, claims 9-20 drawn to a print controller, and Group III, claims 21-23 drawn to an office machine (e.g., printer). The previously made provisional election with traverse to prosecute the invention of Group II, claims 9-20, is hereby affirmed.

REJECTION OF CLAIMS 9-13 UNDER 35 U.S.C. 102(e)

Claims 9-13 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 3-4 of the Action. Specifically, claims 9-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohara et al (U.S. Pat. No. 6,438,643, hereinafter referred to as "Ohara" or "the Ohara reference").

The rejections under 35 U.S.C. 102(e) are respectfully traversed, at least insofar as applied to the amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

FIG. 1, FIGS. 8-11, elements 11-13, Column 3, lines 33-45, Column 15, lines 15-60 & 62-67, and Column 17, lines 22-35, of the Ohara reference are cited as

9

teaching the printer controller as claimed. It is respectfully submitted that the Ohara reference fails to teach or suggest inter alia the following claim limitations: "a dynamic loading program for automatically managing the download of the non-resident printer controller program to the random access memory," as claimed in claim 9.

For example, in the Ohara system, a user (e.g., a system administrator) uses manager G (hardware plus software) to manually update firmware for the NICs 1 and printers (e.g., 10, 30, 40). The manager G seems to send a request to the printers in the network for the printers to send information (e.g., printer name and number) back to a manager. Ohara's software, executing on manager G, then displays this information by using the screens illustrated in FIGS. 8-11. A user (e.g., system administrator) uses these displays to manually select printers or NICs on which to install a newer version of firmware. It is noted that the new version of firmware is presumably obtained manually by the user from the manufacturer of the NIC or printers.

It is a strained interpretation to equate this manual updating of firmware of Ohara that requires user input, selection, etc. with automatically managing the download of the non-resident printer controller program to the random access memory as claimed.

Furthermore, the Ohara reference fails to teach or suggest inter alia the following claim limitations: "A printer controller disposed in a cable that includes a first connector for coupling to a printer and a second connector for coupling to a source of data to be printed, said printer controller external to the printer," as claimed in claim 9. The Ohara system includes printers (e.g., 10, 30, 40) with a prior art configuration.

Specifically, the printers each have an enclosure that houses hardware and software (e.g., CPU 11, RAM 13, and ROM 12) that receives the data generated by computers 20, prepares the data, and sends the data to a printing portion 17 (see FIG. 1).

One aspect of the invention is to move the printer controller functions out of the printer enclosure and into a cable. In this manner, the printer controller can be easily upgraded, repaired, or replaced by a user without the involvement of the printer manufacturer.

Dependent claims 10-13 incorporate all the limitations of independent claim 9. In this regard, the dependent claims also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited reference.

Regarding claim 10, the Ohara reference fails to teach or suggest inter alia the following claim limitations: "wherein the dynamic loading program, when executing on the processor, selectively downloads from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller program resident in the random access memory is not valid," as claimed in claim 10.

Regarding claim 11, the Ohara reference fails to teach or suggest inter alia the following claim limitations: "wherein the dynamic loading program, when executing on the processor, selectively downloads from the source the non-resident printer controller program to the printer controller when it is determined that the current version of the printer controller program resident in the random access memory is one of non-existent and corrupt," as claimed in claim 11.

11

As advanced previously, it is a strained interpretation to equate the manual update procedure of Ohara that requires user input with automatically determining whether to download printer controller program when the program is either not resident in memory or corrupt as claimed. Specifically, Ohara does <u>not</u> teach or suggest updating firmware when the firmware is corrupt. Moreover, there does not appear to be any mechanism in Ohara to check whether the firmware is corrupt. Furthermore, there does not appear to be any mechanism in Ohara to determine that firmware is missing. The printers in Ohara's system, as with most prior art printers, have firmware stored therein (e.g., in the ROM). For example, the firmware is pre-loaded into the ROM and ships with the printer.

In view of the foregoing, it is respectfully submitted that the Ohara reference, whether alone or in combination, fails to teach or suggest the printer controller as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 102(e) be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. 103(a)

Paragraphs 5 to 8 of the Action set forth claim rejections based on 35 U.S.C. 103(a). These rejections combine or rely upon two references or three references to support the obviousness rejections. The combinations proposed by the Action in paragraphs 5-8 are contested as improper for the reasons advanced below. However, even if these combinations were proper, which is not conceded, the resulting

combinations would still fail to teach or suggest the specific limitations set forth by the claimed invention as described in greater detail hereinafter.

Claims 14-15 are rejected under 35 U.S.C. 103(a) for the reasons set forth in paragraph 5 on page 5 of the Action. Specifically, claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al (U.S. Pat. No. 6,438,643, hereinafter referred to as "Ohara" or "the Ohara reference") in view of Narukawa (U.S. Pat. No. 5,978,943, hereinafter referred to as "Narukawa" or "the Narukawa reference").

Narukawa is cited for teaching a printer controller embodied in a single integrated circuit and in an ASIC. Specifically, FIG. 1 and col. 1, lines 1-67 to col. 2, lines 1-52 are cited for this teaching. It is respectfully submitted that the combination of Ohara and Narukawa fails to teach or suggest the invention as claimed for the same reasons as advanced previously. Narukawa does not cure the deficiencies of Ohara.

In view of the foregoing, it is respectfully submitted that the Ohara reference, whether alone or in combination with the Narukawa reference, fails to teach or suggest the printer controller as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Claims 16-18 are rejected under 35 U.S.C. 103(a) for the reasons set forth in paragraph 6 on pages 5-7 of the Action. Specifically, claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara (U.S. Pat. No. 6,438,643, hereinafter referred to as "Ohara" or "the Ohara reference") in view of Terashima et al. (U.S. Pat. No. 6,538,762, hereinafter referred to as "Terashima" or "the Terashima reference").

13

Terashima is cited for teaching that the printer controller is external to the printer. Specifically, FIGS. 1-4 are cited for this teaching.

Specifically, the Ohara reference, whether alone or in combination with the Terashima reference, fails to teach or suggest inter alia the following claim limitations: "determining whether the printer controller program is compatible with the print engine, the printing software and printer controller," as claimed in claim 16.

Typically, in the prior art, the printer controller is assembled with the print engine, and the assembly is disposed in a printer's enclosure. Aside from limited downloading of new fonts to a FLASH memory in the printer, there is no ability for the user to easily modify the hardware and software components of the printer controller without assistance from the printer manufacturer.

One aspect of the invention is the provision of a printer controller in a cable that can be easily replaced or upgraded by a user. For example, replacing or upgrading a printer controller can be accomplished through the purchase of a new cable that includes a new printer controller that provides new features, etc. However, this novel system according to the invention introduces new problems that are not encountered by the prior art printing systems. One such problem is related to the compatibility of the new printer controller, especially, the printer controller software or programs, with 1) the print engine and 2) with the printer driver program at a source (e.g., host computer). This compatibility is ensured in the prior art systems since the printer manufacturer integrated these components.

14

For the printer controller to work properly, the printer controller program must be compatible with the print engine at the printer, the printer driver program at the source, and the printer controller hardware in the cable.

The references do not fairly teach automatically checking the compatibility of the printer controller software with the print engine and the printer driver program as claimed by the invention. For example, the compatibility test of Ohara (see FIG. 14) is not the same as automatically determining whether the printer controller program is compatible with the print engine and the driver software as claimed. Specifically, the compatibility test of Ohara compares the name of the processing device whose number is equal to the value of the variable "i" with the device name 301 of the firmware read in step S51, a warning message 240 is provided (see col. 21, lines 27-37), which is different from the automatic compatibility checking as claimed.

Whereas Ohara checks the contents of a field in the firmware with the name and number of a processing device (e.g., printer), the claimed invention, checks compatibility of printer controller software with a print engine, which is not identified by a printer name and number. Furthermore, Ohara does not fairly teach checking whether the printer controller program is compatible with driver software or the printer controller hardware as claimed. The systems of Ohara and Terashima are similar to other prior art systems in which compatibility of the printer controller program with the print engine and the driver software is assumed.

It is noted that dependent claims 17 and 18 incorporate all the limitations of independent claim 16. Furthermore, the dependent claims also add additional

15

limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

In view of the foregoing, it is respectfully submitted that the Ohara reference, whether alone or in combination with the Terashima reference, fails to teach or suggest the printer controller and method as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Claim 19 is rejected under 35 U.S.C. 103(a) for the reasons set forth in paragraph 7 on page 7 of the Action. Specifically, claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara (U.S. Pat. No. 6,438,643, hereinafter referred to as "Ohara" or "the Ohara reference") in view of Terashima et al. (U.S. Pat. No. 6,538,762, hereinafter referred to as "Terashima" or "the Terashima reference") and further in view of Benjamin et al. (U.S. Pat. No. 6,113,208, hereinafter referred to as "Benjamin" or "the Benjamin reference").

Benjamin is cited for teaching automatically downloading from a website. Specifically, col. 3 lines 50-67 and col. 4, lines 1-40 are cited for this teaching. It is respectfully submitted that the combination of Ohara, Terashima et al., and Benjamin fails to teach or suggest the invention as claimed for the same reasons as advanced previously. Benjamin does not cure the deficiencies of Ohara and Terashima.

In view of the foregoing, it is respectfully submitted that the Ohara reference, whether alone or in combination with the Terashima reference and the Benjamin reference, fails to teach or suggest the printer controller and method as claimed.

16

Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Claim 20 is rejected under 35 U.S.C. 103(a) for the reasons set forth in paragraph 8 on pages 7-8 of the Action. Specifically, claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara (U.S. Pat. No. 6,438,643, hereinafter referred to as "Ohara" or "the Ohara reference") in view of Terashima et al. (U.S. Pat. No. 6,538,762, hereinafter referred to as "Terashima" or "the Terashima reference") and further in view of Austin (U.S. Pat. No. 6,665,089, hereinafter referred to as "Austin" or "the Austin reference").

Austin is cited for teaching performing a cyclic redundancy check on the printer controller program. Specifically, FIG. 18 and col. 12 lines 60-67 to col. 13, lines 1-30 are cited for this teaching. It is respectfully submitted that the combination of Ohara, Terashima et al., and Austin fails to teach or suggest the invention as claimed for the same reasons as advanced previously. Austin does not cure the deficiencies of Ohara and Terashima.

In view of the foregoing, it is respectfully submitted that the Ohara reference, whether alone or in combination with the Terashima reference and the Austin reference, fails to teach or suggest the printer controller and method as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

17

THE PROPOSED COMBINATIONS ARE BASED ON IMPERMISSIBLE USE OF THE CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE TEACHINGS OF THE CITED REFERENCES

It is respectfully submitted that the references are improperly combined. It appears that the Action uses improper hindsight to select components or elements from the different references to arrive at the claimed invention.

Assuming arguendo that the different components of the different references may be combined in the manner outlined in the Action, the Federal Circuit has stated, "The mere fact that the prior art may be modified in the manner suggested by the Examiner does <u>not</u> make the modification obvious <u>unless the prior art suggested the desirability of the modification.</u>" In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held <u>In re Fritch</u>, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

> In proceedings before the Patent and Trademark Office, the Examiner <u>bears the burden of establishing a prima facie case of obviousness based upon the prior art</u>. ... "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant teachings of the references. <u>In re Fine</u>, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]

Consequently, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from the cited references (e.g., Ohara, Narukawa, Terashima, Benjamin, Austin) to arrive at

the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, "It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated, "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting In re Fine, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), In re Fritch, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, "The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself." In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)
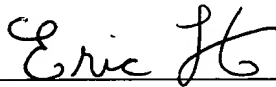
Accordingly, hindsight reconstruction may not be used to pick a component from one reference and another component from another reference to arrive at the invention as claimed. Accordingly, it is respectfully requested that the rejections of claims 14-15, 16-18, 19 and 20 under 35 U.S.C. 103(a) be withdrawn.

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.
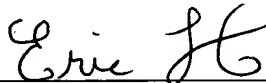
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MAIL STOP: NON-FEE AMENDMENTS, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date below.

_____   August 18, 2004
Eric Ho (RN 39,711)   (Date)

20